

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-29 (canceled).

Claim 30 (new). A composition comprising at least one expandable particulate material which expands on the application of heat and at least one particulate nano-filler, together with at least one polymer and/or at least one curable monomer or oligomer.

Claim 31 (new). The composition according to claim 30 wherein the expandable particulate material comprises expandable graphite.

Claim 32 (new). The composition according to claim 30 wherein the particulate nano-filler is a nano-clay.

Claim 33 (new). The composition according to claim 30 which further comprises at least one particulate material having fire retardant properties.

Claim 34 (new). The composition according to claim 33 wherein the particulate material having fire retardant properties is a metal oxide/acid, a hydrate, a hydroxide, a carbonate, a sulphate, a silicate, a nitride, a molybdate or a stearate.

Claim 35 (new). The composition according to claim 34 wherein the particulate material having fire retardant properties is a zinc or calcium borate, stannate or molybdate, a zinc or magnesium stearate, an ammonium molybdate, a calcium hydroxide, an aluminum trihydroxide, a silicon oxide, a silicon nitride, a boron nitride, a sodium metasilicate pentahydrate, a potassium tetraborate tetrahydrate, a magnesium hydroxide, a magnesium

silicate, a titanium oxide, a ferric oxide, a molybdenum oxide, a lead phthalate, a stannous chloride, or a complex thereof.

Claim 36 (new). The composition according to claim 33 which comprises two or more particulate materials having fire retardant properties.

Claim 37 (new). The composition according to claim 33 wherein the particulate material having fire retardant properties is present in an amount of from 1 to 95% w/w based on the total weight of the composition.

Claim 38 (new). The composition according to claim 30 wherein the polymer and/or curable monomer or oligomer contains one or more epoxy, acrylic, methacrylic, amine, hydroxyl, carboxyl, anhydride, olefinic, styrene, acetoxyl, methoxy, ester, cyano, amide, imide lactone or urethane groups.

Claim 39 (new). The composition according to claim 30 wherein the particulate nano-filler is present in an amount of from 0.1 to 95% w/w based on the total weight of the composition.

Claim 40 (new). The composition according to claim 30 wherein the expandable particulate material is present in an amount of from 0.1 to 95% w/w based on the total weight of the composition.

Claim 41 (new). The composition according to claim 30 which is an adhesive, sealant or coating composition.

Claim 42 (new). A cured article which comprises a polymer matrix in association with at least one expandable particulate material which expands on the application of heat and at least one particulate nano-filler.

Claim 43 (new). The cured article according to claim 42 which further includes a fire-resistant coating on the surface of the cured article which is produced by subjecting the polymer matrix, expandable particulate material and particulate nano-filler to heat.

Claim 44 (new). A process for the manufacture of a cured article which comprises admixing at least one expandable particulate material which expands on the application of heat with at least one particulate nano-filler and at least one curable monomer, oligomer and/or polymer to form a mixture and subsequently curing the mixture.

Claim 45 (new). A method of making an adhesive bond, seal or coating comprising applying a composition according to claim 30 to a substrate and curing the composition.

Claim 46 (new). A composition comprising (i) one or more reactive monomers, oligomers and/or polymers containing reactive species selected from the group consisting of:

- a. epoxy-functional compounds and resins in combination with amino-functional compounds, resins, oligomers, or polymers;
- b. hydroxy-functional compounds, oligomers, polymers in combination with isocyanate-functional monomers, dimers, oligomers, or polymers;
- c. methacrylic or acrylic functional monomers in combination with methacrylic or acrylic functional oligomers or polymers;
- d. amino-functional polyorganosiloxane in combination with epoxy-functional compounds, resins or oligomers;
- e. hydroxy-functional polyorganosiloxane in combination with isocyanate-functional monomers, dimers or oligomers;
- f. methacrylated or acrylated polyorganosiloxane;

- g. epoxy-functional compounds and resins and amino-functional compounds, resins, oligomers, or polymers in combination with amino-functional polyorganosiloxane and epoxy-functional compounds, resins or oligomers;
 - h. hydroxy-functional compounds, oligomers, or polymers and isocyanate-functional monomers, dimers, oligomers, or polymers in combination with hydroxy-functional polyorganosiloxane and isocyanate-functional monomers, dimers or oligomers; and
 - i. methacrylic or acrylic functional monomers, oligomers or polymers in combination with methacrylated or acrylated polyorganosiloxane;
- (ii) expandable graphite; (iii) particulate nano-clay; and optionally (iv) one or more flame retardant additives and smoke suppressants selected from the group consisting of zinc borate, aluminum trihydroxide, and ammonium octamolybdate.

Claim 47 (new). A composition comprising (i) a blend of polyorganosiloxane containing one or more amino, hydroxyl, methacrylic, acrylic or epoxy groups and (ii) a second component containing a reactive species selected from the group consisting of:

- a. epoxy-functional compounds and resins in combination with amino-functional compounds, resins, oligomers, polymers;
- b. hydroxy-functional compounds, oligomers, polymers in combination with isocyanate-functional monomers, dimers, oligomers, polymers; and
- c. methacrylic or acrylic functional monomers in combination with methacrylic or acrylic functional oligomers or polymers.

Claim 48 (new). The composition according to claim 47 wherein the polyorganosiloxane is polydimethylsiloxane.

Claim 49 (new). A curable composition comprising (i) one or more reactive monomers, oligomers and/or polymers comprising at least one polyorganosiloxane containing one or more amino, hydroxyl, methacrylic, acrylic or epoxy groups and (ii) a second component containing reactive species selected from the group consisting of:

- a. epoxy-functional compounds in combination with amino-functional compounds;
- b. hydroxy-functional compounds in combination with isocyanate-functional compounds; and
- c. methacrylic or acrylic functional compounds.

Claim 50 (new). The composition according to claim 49 wherein the reactive species is selected from the group consisting of an epoxy-functional compound in combination with an amino-functional polyorganosiloxane, an isocyanate-functional compounds in combination with a hydroxyl-functional polyorganosiloxane and a methacrylic or acrylic functional compounds in combination with a methacrylated or acrylated polyorganosiloxane.

Claim 51 (new). The composition according to claim 50 wherein the polyorganosiloxane is polydimethylsiloxane.

Claim 52 (new). The composition according to claim 50 which further includes at least one expandable particulate material which expands on the application of heat and at least one particulate nano-filler.

Claim 53 (new). A method of enhancing fire resistance of a substrate by applying a composition according to claim 46 to the substrate.

Claim 54 (new). A method of enhancing fire resistance of a substrate by applying a composition according to claim 46 to the substrate.

Claim 55 (new). A method of enhancing fire resistance of a substrate by applying a composition according to claim 47 to the substrate.

Claim 56 (new). A method of enhancing the fire resistance of a substrate by applying a curable composition according to claim 49 to the substrate.

Claim 57 (new). A fire resistant material comprising a blend of polymers of which at least one is a silicone introduced into the polymeric matrix by a reaction other than condensation or hydrosilylation.